Snohomish County Green Purchasing Workshop

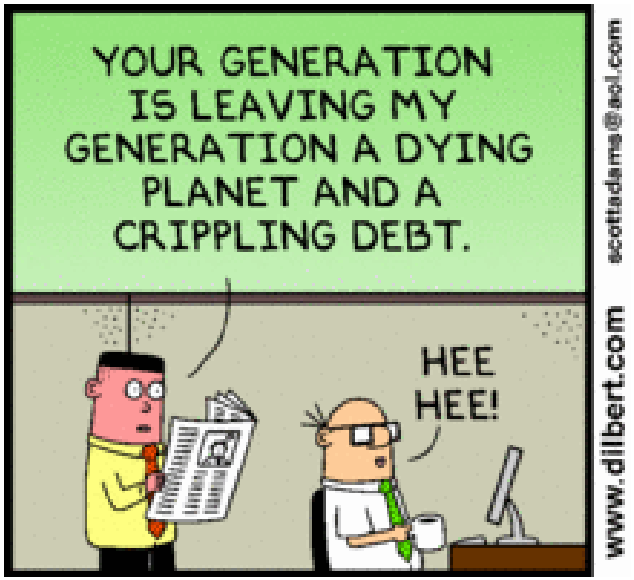
Everett, WA - May 8, 2014

Freeman Anthony, Board of Directors

Greenroads Foundation

Overview

- Brief background on the Greenroads® Rating System
- Quick example credits
- Why use Greenroads?



Sustainability
"I think of it as living the life you want, with as much Earth-wise efficiency as your time and budget reasonably allow."

-Scott Adams, How I (Almost) Saved the Earth, *WSJ*, 21 August 2010

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The Greenroads® Rating System

What is the Greenroads Rating System?

- Third-party certification for transportation projects
  - Applies to new and existing/reconstruction projects
  - Recognizes and quantifies roadway sustainability
  - Awards points for sustainable practices

What can I do on my project tomorrow to be more sustainable?

Greenroads

more sustainable roads for a better transportation future

Why Greenroads Works

- Defines what roadway project features contribute to sustainability.
- Provides an accounting tool for sustainability benchmarking.
- Communicates sustainability efforts to key stakeholders and taxpayers.
- Helps designers and contactors participate in roadway sustainability.
- Stimulates the market for sustainable practices and products

Overall goal: manage and improve roadway sustainability

The Greenroads Story

- Development:
  - Began in 2007 at University of Washington
  - Industry, local and DOT research support
  - 6 years, over 100 people, 120+ test projects
- Managed by Greenroads Foundation since 2010
  - Independent 501(c)(3) non-profit organization

What are the benefits of greening our roads?

Greenroads do good things:

- Lower initial cost
- Lower lifecycle costs
- Lower user cost
- Strengthened local economies
- Higher property values
- Healthier communities and people
- Reduced environmental impacts

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Greenroads is a project-oriented system

It focuses on design and construction.

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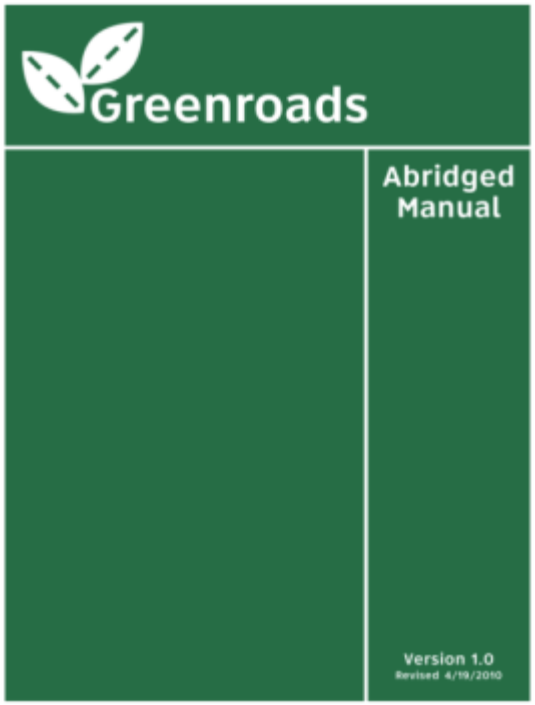
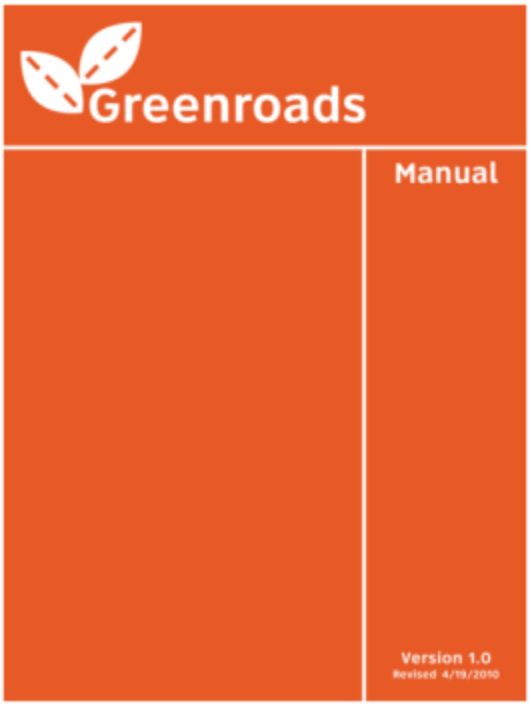
Planning → **Design & Construction** → Operation

Greenroads Essentials

The Greenroads Manual





- Version 1.5 manual published February 2011
- Errata for version 1.5 posted in October
- Download all for free at: www.greenroads.org

What's inside?

- Each Project Requirement or Voluntary Credit has these:
  - Goal
  - Requirements to meet the credit intent
  - Documentation to submit
  - Supporting information
    - Suggested approaches and strategies
    - Examples
    - Potential issues
    - Research
    - Glossary
    - References
  - Relationships to related credits, sustainability components and measureable benefits

ENVIRONMENTAL REVIEW PROCESS

PR-1

REQUIRED

GOAL

Evaluate impacts of roadway projects through an informed decision-making process.

REQUIREMENTS

Perform and document a comprehensive environmental review of the roadway project. This review should clearly and concisely document:

1. Project name and location.
2. Names and contact information of key players in the decision making process, including (but not limited to): the owner agency, agency representatives responsible for completing the environmental review process, other stakeholders, and relevant professionals involved.
3. Intent and purpose of the roadway project.
4. Descriptions of potential environmental, economic and social impacts of the intended roadway project.
5. Detailed descriptions of the extent of the significance of these impacts with respect to the decision-making process and feasible performance expectations.
6. Description of the public involvement opportunity in the environmental review process; document this opportunity and the results of input in the final decisions.
7. Any jurisdictional requirements for more detailed environmental review documents such as environmental impact statements (EIS) or environmental assessments (EA) to determine the significance of environmental impacts.
8. Description of the final environmental decisions made.

Details

An environmental review process is a method of decision-making used in project development. The basic intent of the process is to promote informed decision-making by explaining the project in a comprehensive, concise and understandable way. This explanation involves an evaluation of environmental, social and economic impacts in order to meet existing regulations and public stakeholder needs. These impacts, regulations, and needs shape basic decision criteria, vary significantly in complexity between projects, and dictate the effort required during the review process and project implementation. The National Environmental Policy Act (NEPA) provides formal guidelines for federally funded roadway projects, and many states have environmental review processes similar to NEPA.

DOCUMENTATION

- Copy of the final decision document that demonstrates an environmental review process has been completed for the project, with all appropriate agency or jurisdiction representative signatures. Any of the following documents will suffice:
  - Executive summary of the EA or EIS, the Record of Decision (ROD) or Finding of No Significant Impact (FONSI), or jurisdiction equivalent of these documents.
  - Completed copy of the Washington State Department of Ecology State Environmental Policy Act (SEPA) Checklist (or local equivalent). **Note:** this is recommended for projects exempt from a formal environmental review.

RELATED CREDITS

- ✓ PR-2 Lifecycle Cost Analysis
- ✓ PR-3 Lifecycle Inventory
- ✓ AE-3 Context Sensitive Solutions
- ✓ MR-1 Lifecycle Assessment

SUSTAINABILITY COMPONENTS

- ✓ Ecology
- ✓ Economy
- ✓ Equity
- ✓ Extent
- ✓ Expectations
- ✓ Experience
- ✓ Exposure

BENEFITS

- ✓ Reduces Air Emissions
- ✓ Reduces Wastewater Emissions
- ✓ Reduces Soil/Solid Waste Emissions
- ✓ Improves Human Health & Safety
- ✓ Improves Business Practice
- ✓ Increases Awareness
- ✓ Increases Aesthetics

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Greenroads Categories: Version 1.5

Category	Description	Points
Project Requirements	Minimum requirements for a Greenroad	Req.
Voluntary Credits		
Environment & Water	Stormwater, habitat, vegetation	21
Access & Equity	Modal access, culture, aesthetics, safety	30
Construction Activities	Construction equipment, processes, quality	14
Materials & Resources	Material extraction, processing, transport	23
Pavement Technology	Pavement design, material use, function	20
	Total Voluntary Credit Points	**108**
Custom Credits	Write your own credit for approval	10
	Total Points	**118**

PR-8 Low Impact Development

Use low-impact development (LID) stormwater management solutions where appropriate to better mimic pre-development hydrological conditions.

Filterra stormwater unit (left) in Oak Harbor, WA and pervious concrete sidewalk (right) in Bellingham, WA

AE-5 Pedestrian Access

Promote walkable communities by providing or improving pedestrian facilities.

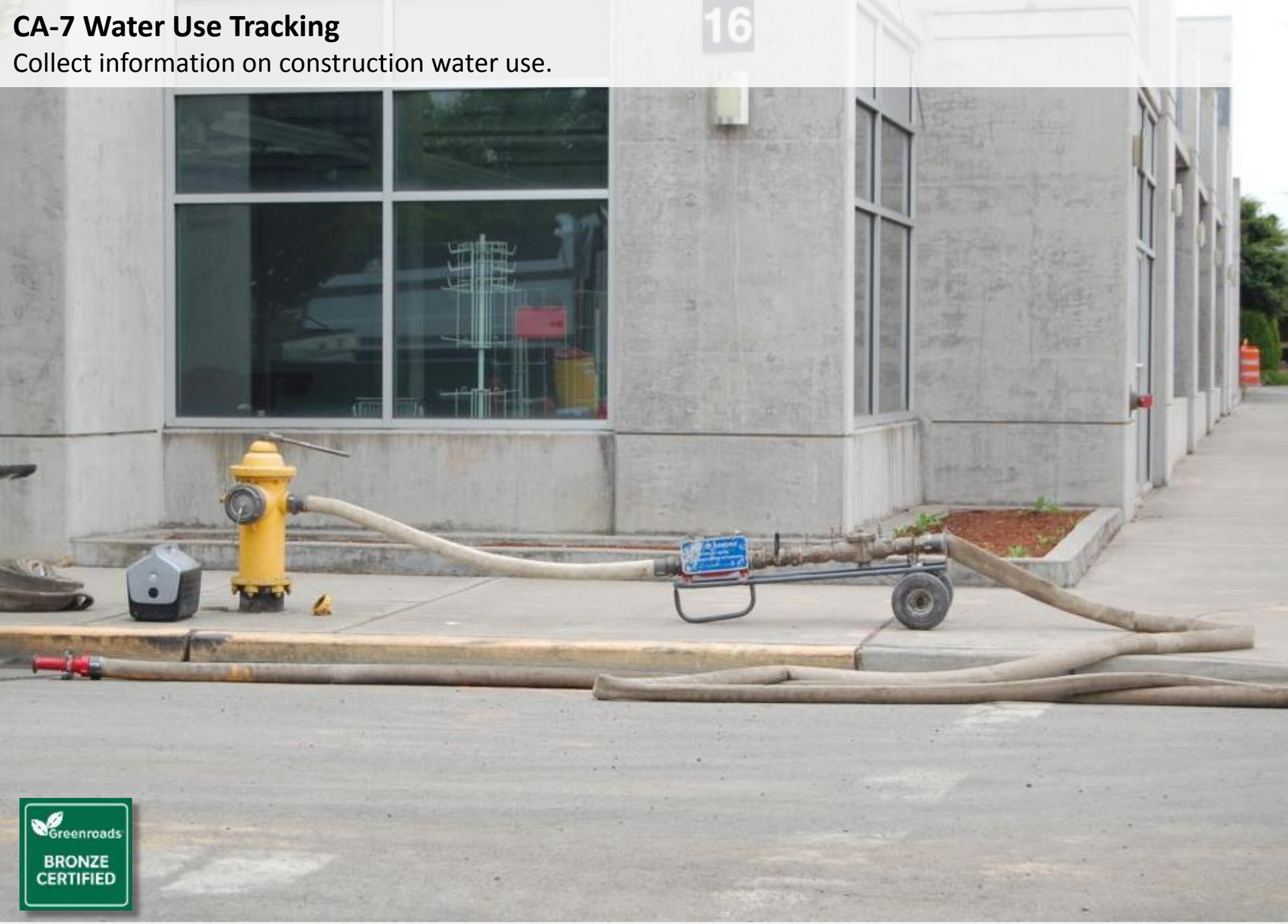
Greenroads BRONZE CERTIFIED

KPG

Pedestrian corridor design for South Division Street Promenade, Auburn, WA

CA-7 Water Use Tracking

Collect information on construction water use.



Greenroads BRONZE CERTIFIED

South Division Street Promenade, Auburn, WA

Certification Levels

Greenroads BRONZE CERTIFIED

32-42 points

Greenroads SILVER CERTIFIED

43-53 points

Greenroads GOLD CERTIFIED

54-63 points

Greenroads EVERGREEN CERTIFIED

64+ points

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Why bother?
A few key ideas…

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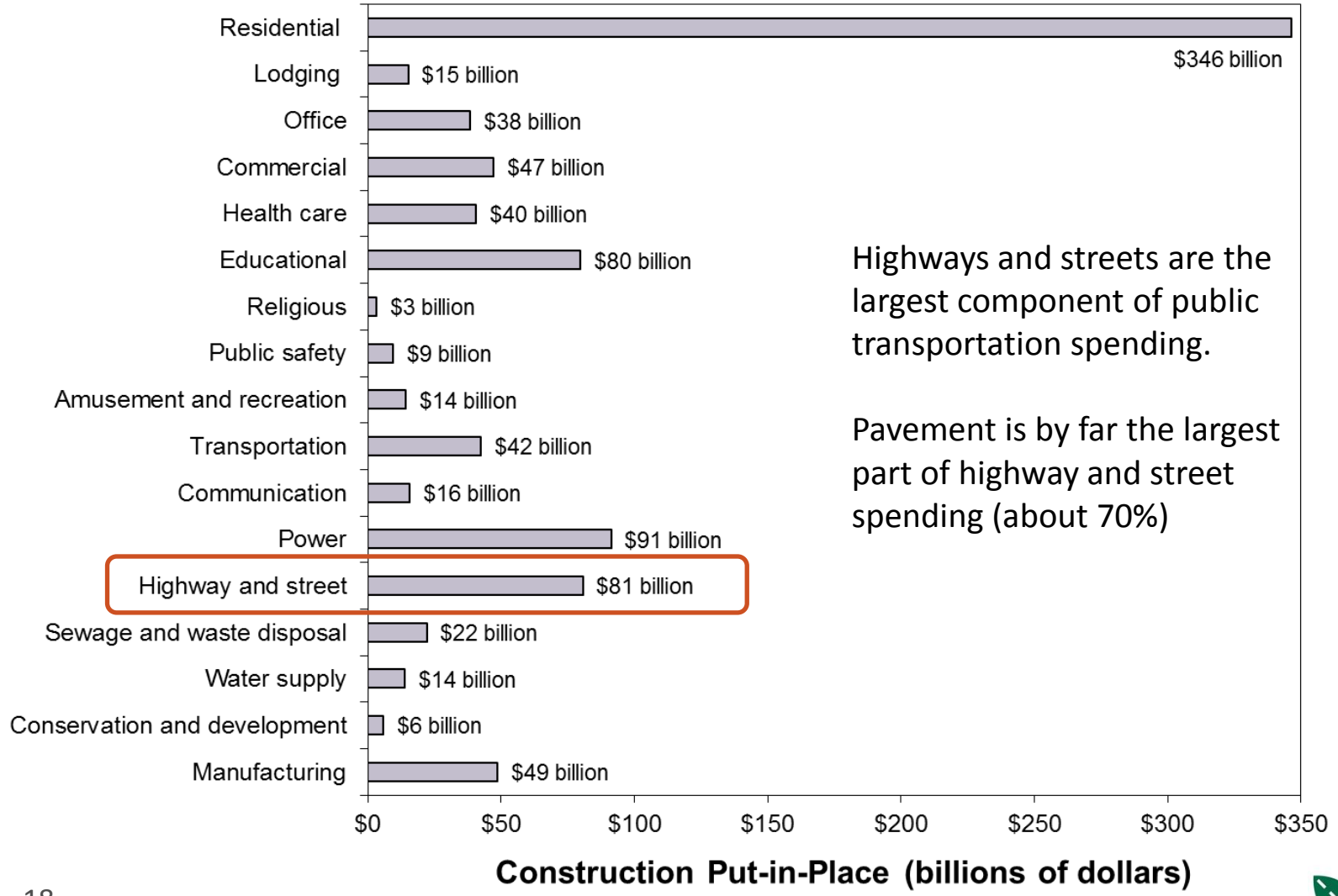
Pavements > 70% of Highway & Street Spending



Highways and streets are the largest component of public transportation spending.

Pavement is by far the largest part of highway and street spending (about 70%)

Data from U.S. Census Bureau (http://www.census.gov/construction/c30/historical_data.html)

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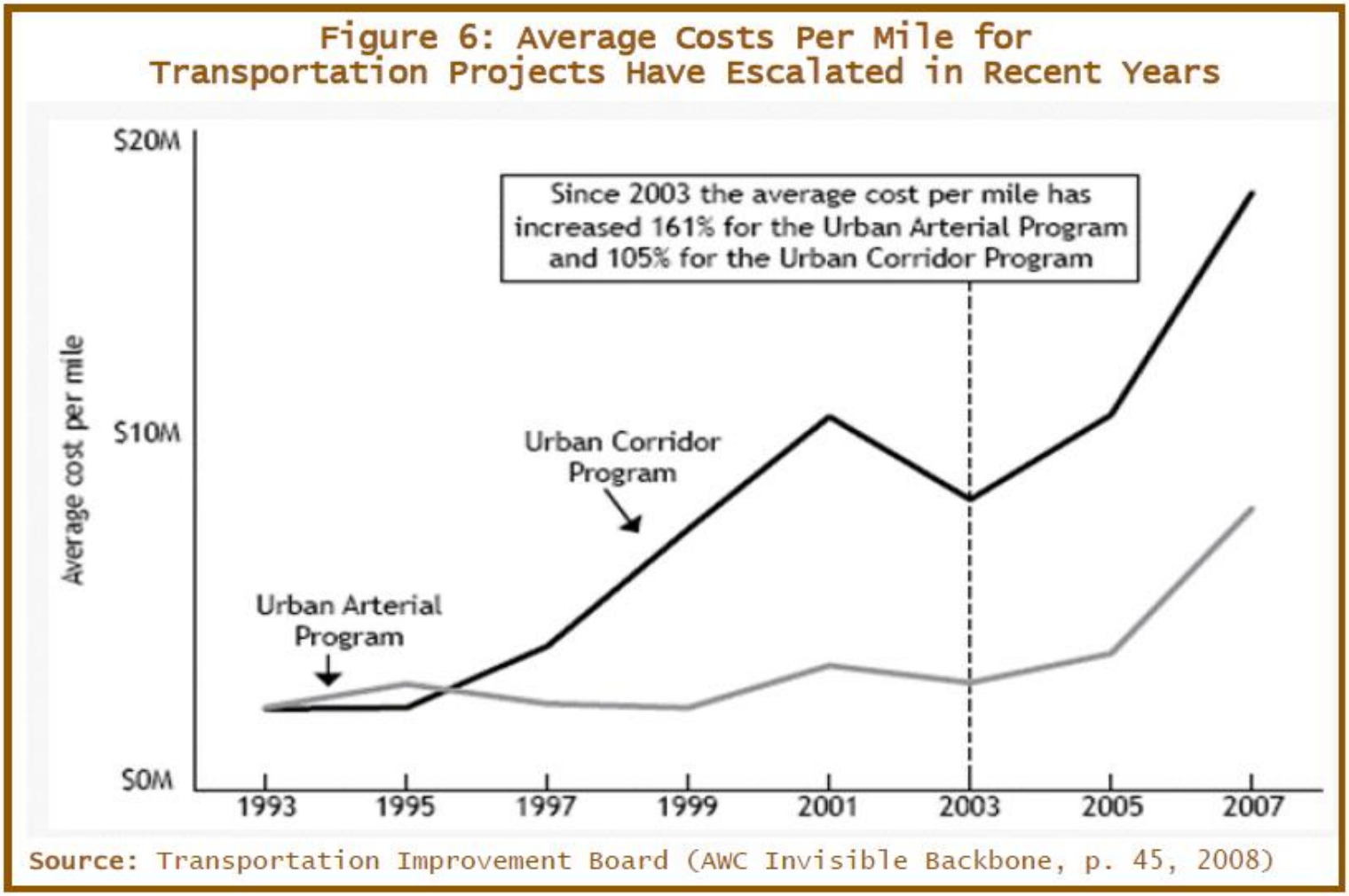
Key Issue: Costs



From PSRC "Funding for Local Government Infrastructure" (2009)

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Public agencies use rating systems all the time.

(Maybe more than they might like to admit.)

Some examples from LEED:

City of Seattle: Sustainable Building Policy
All City construction projects over 5,000 ft^2 must meet LEED Silver rating level. LEED Pilot program provides small grants to help.

King County
Highest LEED level achievable based on life-cycle cost analysis and funding. Applies to all new construction and renovation over $250,000.

Washington State
All State funded projects over 5,000 ft^2 have a goal of LEED silver.

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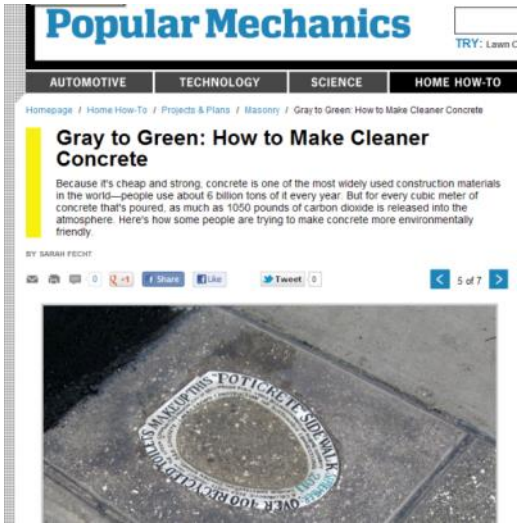
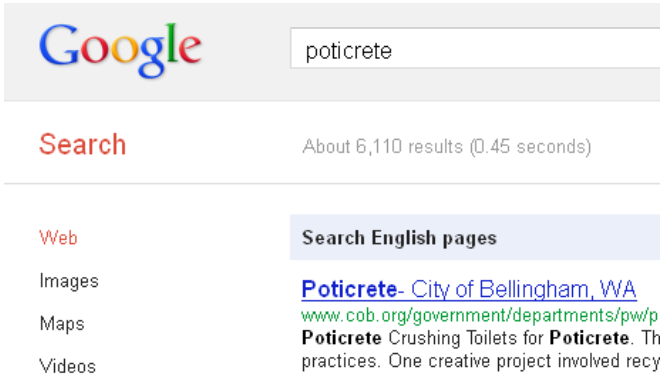
And they like to talk about good things they do.

"Resulting Glory" – Slide adapted from 2012 APWA Congress Presentation by Freeman Anthony, Project Engineer, City of Bellingham Public Works





Rating systems help address high impact items.

An example: WSDOT's 2009-2011 budget

Operating expenditures	$1.4 billion
Highways	$1.08 billion
Support services	$0.30 billion
Capital expenditures	$4.4 billion
Highways	$3.88 billion
Ferries	$0.28 billion
Rail	$0.10 billion
Local Programs	$0.13 billion
Total	$5.8 billion

<u>WSDOT has to meet LEED® requirement</u>

Of this budget, $4.8 million (0.08%) is dedicated to "buildings and other support facilities" that could be addressed by this requirement.

<u>DOT's Key Impact Area is Transportation</u>

Of this budget, $4.38 billion (76%) could be addressed by Greenroads.

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Green may help save money.

Credit		Cost & Savings	Source
PR-8	Low-Impact Development	15-80% initial cost savings Lower initial cost	EPA
EW-5	Site Vegetation	30% premium on initial const. 15% savings per year Payback in 2 years	Santa Monica, CA
AE-1	Safety Audit	$1,000-$8,000 initial cost B/C ratio: 3:1 or more Payback in 1 year	NCHRP Synthesis 336
MR-4	Recycled Materials	17% savings for materials 10% savings for HMA in-place Lower initial cost	Kristjansdottir et al. (2007) using 20% RAP
PT-1	Long-Life Pavement	$65,000 premium on initial const. $165,000/lane-mile over 50 yrs Payback in 20 yrs	Muench et al. (2004) for 2-lane road
PT-3	Warm Mix Asphalt	$50,000 initial investment $0.35-$5.00 savings/ton Payback in 10,000-145,000 tons	Kristjansdottir et al. (2007) for foaming plant attachments

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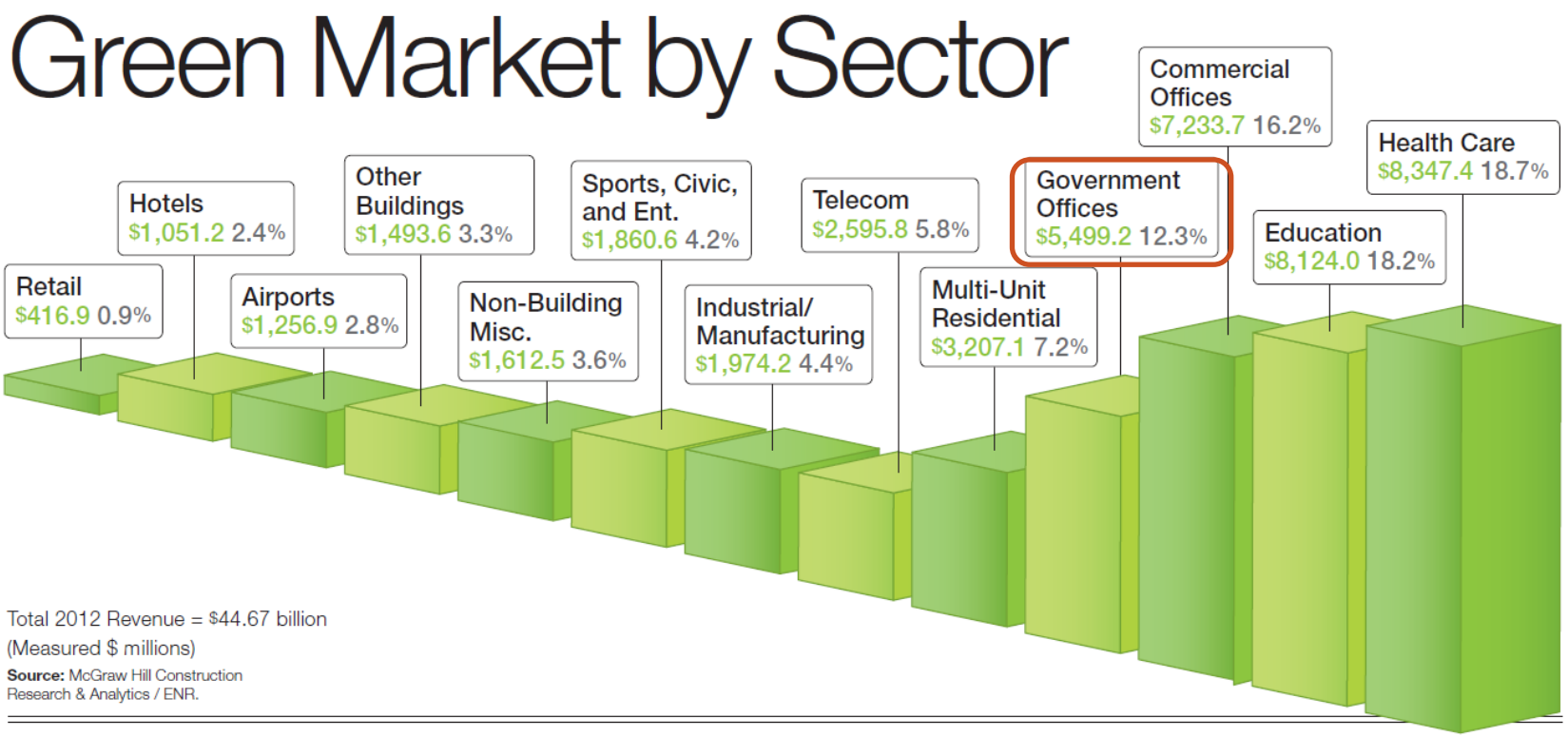
Being green now means business.

Tulacz, G. (2013). The Top 100 Green Contractors, *ENR*, 16/23 September 2013.



<u>The top 100 Green Contractors</u>

- $44.67 billion 2012 revenue
- Over 1/3 of total revenue from green projects

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Greenroads Project Rating Program - Statistics

- 10 Certified Projects (10+ more coming soon)
- 53* Projects Registered (>$5.5 billion)
  - 7 states registered, 2 countries
  - 4+ more projects pending registration in 2014 (that we know of)
- 14 Projects Pursuing Assessment (Pilot, A-Lined)
  - 2 projects in Canada
  - 7 projects in New Zealand (6 completed)
  - 2 projects in South Africa
  - 1 in Taiwan, Italy, UAE

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But How?

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How to Get Your Project Rated

Apply

- Determine eligibility
- Register project online

Agree

- Sign Review Agreement
- Pay fees

Assess

- Upload documents
- Get feedback

Award

- Report performance periodically
- Display logo

Greenroads FOUNDATION

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How to Get Involved

- Get Experience: Work on a Greenroads Project
  - Screen your project for eligibility for FREE
  - Video tutorials on the website
  - Work with us internationally through Pilot Programs

- Get Educated: Join as a Member
  - Exciting new educational partners (APWA! ITE! AGC!)
  - Become a Founding Sponsor of Greenroads
  - 100+ Sustainable Transportation Professionals (STPs)
  - Membership program growing all over world
  - Committee opportunities for members

www.greenroads.org

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